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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,850	02/27/2004	Vincent J. Gatto	23138/09000	6851

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EXAMINER	
OH, TAYLOR V	
ART UNIT	**PAPER NUMBER**
1625	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/788,850	GATTO ET AL.	
	Examiner	Art Unit	
	Taylor Victor Oh	1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-69* is/are pending in the application.

4a) Of the above claim(s) *50-68* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-49, 69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

The Status of Claims :

Claims 1- 69 are pending.

Claims 1-49 and 69 are rejected.

Claims 50-68 are withdrawn from consideration.

Election/Restrictions

Applicant's election with traverse of claims 1-49 and 69 (Group I) on 10/17/06 is acknowledged.

Group II is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected groups II, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-38 and 43-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 23, 28, 31-32, and 36, the terms " a first catalyst " and" a second catalyst " are recited. The expression of the terms are vague and indefinite because the claim does not elaborate which one is the first catalyst or the second catalyst in the claimed process ; furthermore, there is no distinction between them as to their differences. Therefore, an appropriate correction is required.

In claim 11, the phase " at least about " is recited. The expression of the term is vague and indefinite because the specification does not elaborate what is meant by the terms

" at least about. " the mere reciting those terms is invalid as indicated in the MPEP.

> **A. "About"**
>
> **The term "about" used to define the area of the lower end of a mold as between 25 to about 45% of the mold entrance was held to be clear, but flexible. *Ex parte Eastwood*, 163 USPQ 316 (Bd. App. 1968). Similarly, in *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), the court held that a limitation defining the stretch rate of a plastic as "exceeding about 10% per second" is definite because infringement could clearly be assessed through the use of a stopwatch. However, the court held that claims reciting "at least about" were invalid for indefiniteness where there was close prior art and there was nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term "about." *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991).**

In claims 8 and 43, the term " substantially" is recited. The expression of the term is vague and indefinite because the specification does not elaborate what is meant by the term

" substantially". Therefore, appropriate correction is required.

In claims 21, 33-34 ,49, the term " comprises" is recited. The expression of the term is vague and indefinite because the expression of the term would mean that there are some unknown additional components besides the promoter or the aqueous acid. That term should be used to describe the mixture instead of the definitive compound . Therefore, the examiner recommends to change from" comprises " to "is " or " is selected from ". Therefore, appropriate correction is required

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 38 and 69 are rejected under 35 U.S.C. 102(b) as being anticipated clearly by Evain et al (US 5,264,612).

Evain et al discloses the following reaction process(see col. 5 ,lines 6-32):

EXAMPLE 1

To a 1000 ml reaction vessel, equipped with a twin blade axial flow impeller mechanical agitator, a nitrogen sparge tube, a thermometer, and external oil jacket and a reflux condenser connected to a cold trap and a mercury bubbler, are charged, under nitrogen atmosphere, 206.3 g (1 mole) 2,6-di-t-butylphenol and 30.0 g (217.0 mM) DMB. Potassium t-butoxide (5.61 g, 50.0 mM) is then added and stirring commenced with the agitator set at 750 rpm. The reaction mixture is heated to 110° C. Next 94.63 g (1.10 mole) methyl acrylate is added subnatantly to the reaction mixture over 30 minutes, while stirring. The reaction is then continued for about 120 minutes while maintaining the temperature of the reaction mixture at 140° C. The contents of the reaction vessel is then cooled to 110° C. and 3 ml (0.05 mole) glacial acetic acid is added. An aliquot sample (about 1 ml) is removed from the acidified reaction mixture for the determination of the percent conversion of the 2,6-di-t-butylphenol to the methyl-3-(2,6-di-t-butyl-4-hydroxyphenyl)propionate product (99% conversion). The reaction mixture is then filtered and the filtrate distilled. 274.8 g (94% yield) of the product is obtained which has a purity of greater than 99% by HP5980 gas chromatograph assay.

This is identical with the claims.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

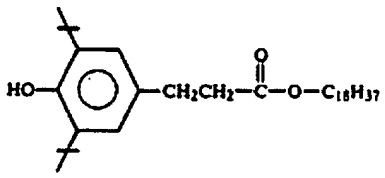
Claims 1-49 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeberli et al (U.S. 4,228,297) in view of Grant et al (Chemical Dictionary, 1990, p. 11-12).

Haeberli et al discloses a process of producing hydroxyalkylphenyl derivative by adding methyl acrylate in the presence of an alkaline catalyst to the alkyl substituted phenolic compound, and adding to the resultant reaction mixture a suitable alcohol in the presence of a second catalyst and further its process has been exemplified as below (see col. 10 ,lines 29-62):

To a 500 ml, 3-necked flask, equipped with a stirrer, a reflux condenser, a calibrated dropping funnel, a thermometer and a nitrogen inlet were charged 103 g of 2,6-di-t-butylphenol. The phenol was heated to 70° C., and the system was purged carefully with nitrogen. Then 1.4 g of potassium t-butoxide were added, followed by 2 ml of isopropyl alcohol. The resultant mixture was heated to 107° C. to 110° C., whereupon 47.3 g of methyl acrylate were added at a uniform rate over a two hour period while maintaining the specified temperature range. The mixture was held for three hours at the specified temperature range. Then vacuum was applied to strip excess methyl acrylate. The vacuum was released with nitrogen, the mixture was cooled to 70° C. and 24.4 g of thiodiglycol were added, followed by 0.47 g of lithium hydroxide monohydrate. Vacuum was applied and the pressure was reduced to 20 mm Hg. The reaction mixture was then gradually heated to 140° to 145° C. in two hours and held at that temperature for three hours. The vacuum was then released with nitrogen, and the reaction mass was cooled to 70° C. and acidified with 3.0 g of glacial acetic acid. 132 g of ethyl alcohol were added to the melt, and the resultant solution was clarified. The filtrate was cooled to 28° C. and seeded with 0.5 g of thio-bis-{ethylene-3-(3,5-di-t-butyl-4-hydroxyphenyl)propionate}.

The reaction product crystallized and the resulting slurry was cooled to 16° C. The product was isolated on a Buchner funnel, washed with cold ethyl alcohol, sucked dry and dried in a vacuum oven at 50° C. to a constant weight. 97.0 g of dry thio-bis- {ethylene-3-(3,5-di-t-butyl-4-hydroxyphenyl)propionate} were obtained; m.p. 71.5° C.; yield 75.4%, based on the thiodiglycol employed.

EXAMPLE 3



The procedure described in Example 1 was followed using, however, 126 g of n-octadecyl alcohol in place of thiodiglycol and crystallizing the reaction product from 750 g of 90% isopropyl alcohol. 218 g of dry n-octadecyl-β-(3,5-di-t-butyl-4-hydroxyphenyl)propionate were obtained; m.p. 53.0° C.; yield 87% based on the n-octadecyl alcohol employed.

(see col. 11, example 3 , lines 20-31).

The second alkaline catalyst may be selected from the classes of compounds listed above for the first alkaline catalyst, i.e., alkali metal hydrides, alkali metal alkoxides of Formula VI or alkali metal amides of Formula VII. In addition, alkali metal hydroxides may be employed, such as lithium hydroxide. Preferred second alkaline catalysts are lithium amide and lithium hydroxide.

(see col. 9 ,lines 1-8).

Furthermore, the overall molar ratio of methyl acrylate and the phenol compound should be at least 1:1, preferably a slightly excess of about 5 to 30 moles percent of methyl acrylate is used (see col. 8 ,lines 43-47).

However, the instant invention differs from the Haeberli et al in that the claimed process uses the phosphoric acid in the neutralization step instead of acetic acid.

With respect to the use of the phosphoric acid in the claimed process, the prior art is silent. However, with respect to the role of the acid in the neutralization step , the acetic acid has the same function as the phosphoric acid in the claimed process; regardless of the type of the acid to be used, the only role of the acid is to neutralize the base in the process. Furthermore, the phosphoric acid is one of the well-known

acids in the art as shown in Grant et al (Chemical Dictionary, 1990, p. 11-12). Therefore, it would have been obvious to the skilled artisan in the art to be motivated to use the phosphoric acid as an alternative to acetic acid for the neutralization step in the prior art process . This is because the skilled artisan in the art would expect such a modification to be feasible and successful as shown in the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas McKenzie can be reached on 571-272-0670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Taylor Victor Oh, MSD,LAC
Primary Examiner
Art Unit : 1625

1/X/07